

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Citation Oil and Gas Corporation
Well Name/Number: BSU G112H
Location: NE NE Section 12 T31N R19E
County: Blaine, **MT;** **Field (or Wildcat)** Bowes

Air Quality

(possible concerns)

Long drilling time: No, 12 to 20 days drilling time.

Unusually deep drilling (high horsepower rig): No, single derrick drilling rig to drill to a vertical pilot hole to 3575'. Plugback and kickoff and drill a horizontal lateral 3430' TVD 6503'MD.

Possible H2S gas production: Slight H2S from the Sawtooth Formation.

In/near Class I air quality area: No Class I air quality area.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

- ☒ Air quality permit (AQB review)
- ☐ Gas plants/pipelines available for sour gas
- ☐ Special equipment/procedures requirements
- ☐ Other: _____

Comments: No special concerns – using small rig to drill a vertical pilot hole to 3575'. Plugback and kickoff and drill a horizontal lateral 3430' TVD 6503'MD.

Water Quality

(possible concerns)

Salt/oil based mud: No, only freshwater, freshwater mud system to be used.

High water table: No high water table anticipated.

Surface drainage leads to live water: Yes, closest drainages are unnamed ephemeral tributary drainages to Snake Creek, about 1/8 of a mile to the north and about 3/8 of a mile to the south from this location. Within these drainages are numerous stock ponds.

Water well contamination: No, closest water wells are about 5/8 of a mile to the north and southeast, about 3/4 of a mile to the north and about 7/8 of a mile to the northeast from this location. Surface casing will be drilled to 1000' with freshwater and steel surface casing set and cemented to surface to protect ground waters.

Porous/permeable soils: No, silty -sandy bentonitic soils

Class I stream drainage: No Class I stream drainages.

Mitigation:

- ☐ Lined reserve pit
- ☒ Adequate surface casing
- ☐ Berms/dykes, re-routed drainage
- ☐ Closed mud system
- ☐ Off-site disposal of solids/liquids (in approved facility)
- ☐ Other: _____

Comments: 1000' of surface casing cemented to surface adequate to protect freshwater zones. Also, fresh water mud systems to be used.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, stream crossings anticipated.

High erosion potential: No, small cut, up to 4.9' and small fill, up to 4.3', required.

Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, large wellsite, 320'X300' location size required.

Damage to improvements: Slight, surface use cultivated land.

Conflict with existing land use/values: Slight, surface use cultivated land.

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other: Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be off existing paved highway, #240 and existing well access trails. About 100' of new access will be built into this location from the existing well access trail. Drilling fluids will be allowed to evaporate in the earthen pits. Cuttings will be allowed to dry in the earthen pits. Pits will be backfilled when dry. No special concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 3/8 of a mile to the northeast, about 1 mile to the south and 1.125 miles to the southeast from this location.

Possibility of H₂S: Slight chance of H₂S from the Bowes Formation.

Size of rig/length of drilling time: Small drilling rig/short 12 to 20 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H₂S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing and operational BOP should mitigate most safety concerns. Distance to nearest residence should mitigate noise concerns. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: None identified.

Conflict with game range/refuge management: None identified.

Threatened or endangered Species Threatened or endangered species identified in Blaine County are the Pallid Sturgeon and the Black Footed Ferret. Candidate species are the Greater Sage Grouse and Sprague's Pipit. NH Tracker website list zero (0) species of concern.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
- ☐ Other agency review (DFWP, federal agencies, DSL)
- ☐ Screening/fencing of pits, drillsite
- ☐ Other: _____

Comments: Private surface cultivated land. There maybe species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified.

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
- ☐ other agency review (SHPO, DSL, federal agencies)
- ☐ Other: _____

Comments: On private cultivated lands. There maybe possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
- ☐ Create demand for new governmental services
- ☐ Population increase or relocation

Comments: Well is a development well within an existing oil field, Bowes Sawtooth Field. No concerns.

Remarks or Special Concerns for this site

Well is a vertical pilot hole to 3575'. Plugback and kickoff and drill a horizontal lateral 3430' TVD 6503'MD into the Sawtooth Formation as a horizontal development well in the Bowes Oil Field.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: April 3, 2012

Other Persons Contacted:

Montana Bureau of Mines and Geology, GWIC website
(Name and Agency)
Water wells Blaine County, MT
(subject discussed)
April 3, 2012
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Blaine County
(subject discussed)

April 3, 2012
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T31N R19E
(subject discussed)

April 3, 2012
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____